REMARKS/ARGUMENTS

With this amendment, claims 10-12, 14, 15, 17-24, 26, 27 and 47-52 are pending. Claims 13, 16, 25, and 28-46 are withdrawn. Claims 1-9 are cancelled. New claims 48-52 are added. For convenience, the Examiner's rejections are addressed in the order presented in the September 21, 2005 Office Action.

I. Status of the claims

Claims 10-15 and 22-27 are amended to recite polypeptides that are the recited sequences. This amendment adds no new matter.

New claim 48 and dependent claims are directed to antibodies that specifically bind to an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:4, and SEQ ID NO:5, and that also specifically bind to native equine IgE. Support for this amendment is found throughout the specification, for example at page 24, lines 6-15. This amendment adds no new matter.

New claims 50 and 51 are directed to either polyclonal or monoclonal antibodies. Support for this amendment is found throughout the specification, for example at page 5, lines 1-4 and pages 14-15. New claim 52 is directed to isolated or purified antibodies. Support for this amendment is found throughout the specification, for example at page 11, lines 10-17. These amendments add no new matter.

II. Objections to the specification

The Office Action objects to the presence of a hyperlink in the specification. In order to expedite prosecution, the specification is amended to remove hyperlinks. In view of this amendment, withdrawal of the objection to the specification is respectfully requested.

III. Rejections under 35 U.S.C. §112, first paragraph, written description

Claims 10-12, 14, 15, 17-24, 26, 27 and 47 are rejected for containing subject matter that allegedly was not described in the specification in a manner to convey to those of

skill that the Applicants had possession of the invention at the time of filing. According to the Office Action, the original claims are drawn to a genus of antibodies of unknown structure and properties that bind to a genus of polypeptides defined only by sequence identity.

At page 5 of the Office Action, the Examiner indicates that antibodies binding to or elicited with isolated polypeptides comprising the amino acid sequences set forth in SEQ ID NO:1, 2, 4, or 5 meet the written description requirement. In order to expedite prosecution, independent claims 10 and 22 are amended to recite antibodies that bind to the amino acid sequences set forth in SEQ ID NO:1, 2, 4, or 5. In view of these amendments, withdrawal of the rejection for alleged lack of written description is respectfully requested.

IV. Rejections under 35 U.S.C. §112, first paragraph, enablement

Claims 10-12, 14, 15, 17-24, 26, 27 and 47 are rejected for allegedly requiring undue experimentation from those of skill in order to practice the invention. According to the Office Action, even conservative substitutions can have unpredictable effects on protein structure and function.

At page 7 of the Office Action, the Examiner indicates that antibodies binding to or elicited with isolated polypeptides comprising the amino acid sequences set forth in SEQ ID NO:1, 2, 4, or 5 meet the enablement requirement. In order to expedite prosecution, independent claims 10 and 22 are amended to recite antibodies that bind to the amino acid sequences set forth in SEQ ID NO:1, 2, 4, or 5. In view of these amendments, withdrawal of the rejection for alleged lack of enablement is respectfully requested.

V. Rejections under 35 U.S.C. §112, second paragraph

Independent claim 22 and dependent claims 23-24, 26, and 27 are rejected because the phrase "the process" recited in claim 22 lacks antecedent basis. In order to expedite prosecution, claim 22 is amended to recite "a process". In view of this amendment, withdrawal of the rejection under 35 U.S.C. §112, second paragraph is respectfully requested.

VI. Rejections under 35 U.S.C. §102(b)

Claims 10-12, 14, 15, 17-19, 22-24, 26, 27 and 47 are rejected as allegedly anticipated under 35 U.S.C. §102(b) by Watson *et al.* or by Halliwell *et al.* in light of Watson *et al.* To the extent the rejections apply to the amended claims, Applicants respectfully traverse the rejections. To anticipate a claim, a reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found...in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus, in order to anticipate, the cited references must contain every element of the claims at issue. The cited references do not.

According to the Office Action, Watson *et al.* teaches a population of antibodies elicited to a recombinant protein comprising the equine IgE sequences recited in the claim. The Office Action uses the same reasoning for the citation of Halliwell *et al.*

Amended claim 10 is directed to antibodies that specifically bind to one of six peptides from the equine IgE protein and that also specifically bind to the equine IgE protein. Amended claim 22 is directed to an antibody that specifically binds to the equine IgE protein and that is made by a process of immunizing an animal with one of six peptides from the equine IgE protein. New claim 48 is directed to antibodies that specifically bind to one of six peptides from the equine IgE protein and that also specifically bind to the native equine IgE protein.

Watson *et al.* teaches a full length sequence for equine IgE and teach a 339 basepair fragment of the equine IgE nucleic acid that encodes a protein used to generate antibodies against a specific fragment of the equine IgE protein. The IgE fragment is part of the C3/C4 region of the IgE protein. Watson *et al.* reports that the disclosed antibodies bind to denatured equine IgE, but do not disclose binding to native equine IgE. Some of the authors of Watson *et al.* are inventors of the pending application, which states at page 2, lines 7-11, that the Watson *et al.* antibodies raised against the C3/C4 region of equine IgE do not recognize native equine IgE. Thus, Watson *et al.* disclose generally antibodies that bind to a specified portion of the denatured equine IgE protein.

The claimed subgenus of antibodies are not disclosed in Watson *et al.* None of the recited peptides SEQ ID NO:1-6 are found in the equine IgE fragment used by Watson *et al.*

to generate antibodies. Watson *et al.* do not disclose or suggest the recited antigenic peptides for generation of antibodies. Therefore, Watson *et al.* does not disclose or teach the claimed antibody species that bind to the recited equine IgE peptide sequences. Moreover, Watson *et al.* does not teach antibodies that bind to native equine IgE as recited in new claim 48. Therefore, Watson *et al.* does not teach all the elements of the claimed invention and cannot anticipate the claims.

Similarly, Halliwell *et al.* discloses purification of a protein believed to be equine IgE and generation of antibodies against that protein. Haliwell *et al.* discloses no sequence of the equine IgE protein and disclose no specific peptide epitopes of the equine IgE protein. As discussed above, Halliwell *et al.* does not disclose the specific group of antibodies that bind to the equine IgE peptides that are recited in the claims. Therefore, Halliwell *et al.* does not teach all the elements of the claimed invention and cannot anticipate the claims.

In view of the above amendments and remarks, Applicants respectfully request withdrawal of the rejections for alleged anticipation.

VII. Rejections under 35 U.S.C. §103(a)

Claims 10-12, 14, 15, 17-24, 26, 27 and 47 are rejected under 35 U.S.C. 103(a) as allegedly obvious over the combined teachings of Marti *et al.*, Griot-Wenk *et al.*, Watson *et al.*, and Lerner *et al.* To the extent the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference must teach or suggest all the claims limitations. MPEP§2143. See also *In re Rouffet,* 47 USPQ2d 1453. The court in *Rouffet* stated that "even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination." *Rouffet* at 1459. The court has also stated that actual evidence of a suggestion, or teaching, or motivation to combine is required and the showing of a

suggestion, or teaching, or motivation to combine must be "clear and particular." *In re Dembiczak*, 50 USPQ2d 1614, 1617 (1999). The Office Action does not provide a prima facie case of obviousness.

According to the Office Action, the combination of Marti *et al.*, Griot-Wenk *et al.*, and Watson *et al.* teach elicitation of anti-equine IgE antibodies to a variety of fragments. Lerner *et al.* allegedly teaches a method to design and produce a specific antigen to produce antibodies for any desired purpose. Applicants respectfully disagree with this characterization of the cited references. None of the cited references, alone or in combination, teach or suggest the claimed antibodies that recognize specific peptides from the equine IgE protein.

Watson *et al.*, as described above, discloses antibodies raised against an IgE fragment that is part of the C3/C4 region of the IgE protein. Also described above, the antibodies of Watson *et al.* do not recognize native equine IgE protein. Marti *et al.* allegedly teaches antibodies that bind to the C3/C4 region of the equine IgE protein and Griot-Wenk *et al.* allegedly teaches antibodies that bind to the C2 region of the equine IgE protein. Marti *et al.* and Griot-Wenk *et al.* both based the amino acid sequence of antigenic protein fragments on a disclosure of Navarro *et al.* (accession number U15150) that allegedly teaches full length equine IgE nucleic acid and amino acid sequences. Watson *et al.* provided their own sequence for equine IgE nucleic acid and amino acid sequence. Applicants present as Exhibit A an alignment of the equine IgE amino acid sequences of Watson *et al.* and Navarro *et al.* Notably, the Navarro *et al.* sequence (top) is significantly different than the Watson *et al.* sequence (lower) and the Navarro *et al.* sequence does not contain the exact sequence of any of the elected antigenic peptides. Therefore, neither Marti *et al.* nor Griot-Wenk *et al.* can disclose the elected antigenic peptides used to generate the claimed antibodies. Moreover, none of these three references disclose or suggest the exact antigenic peptides that are recited in the claims.

Watson *et al.* address the IgE sequence differences with the Navarro *et al.* disclosure by saying that the differences could be due to sequencing errors or polymorphisms in the equine IgE gene. *See, e.g.*, Watson *et al.* page 141. For diagnostic purposes, antibodies against equine IgE proteins are most useful if the antigenic peptide is non-variant and found within the equine IgE protein of most horses. As the elected peptides fall within the region of

differences between the Watson and Navarro IgE sequences, those of skill would have no motivation or expectation of success in use of the recited peptides to generate equine IgE antibodies. Based on the disclosures of Watson *et al.* and Navrro *et al.* the recited peptides run the risk of being in a variable region or of being directed against the wrong sequence.

Only with the disclosure of the present application is it apparent that antibodies against the recited peptides recognize IgE protein from a number of horses and that the antibodies recognize native equine IgE protein.

The Office Action also alleges that the references in combination with Lerner *et al.* would lead one of skill to produce antibodies against specific epitopes. However, Lerner *et al.* provides no teaching of the recited antigenic peptides, either alone or in combination with the other cited references. Moreover, Watson *et al.* appear to have followed the teaching of Lerner *et al.* in designing the antigen for the antibody disclosed in that reference. *See, e.g.*, Watson *et al.* at page 142, left column. The antibody disclosed in Watson *et al.* binds to denatured equine IgE, but not to the native equine IgE protein. *See, e.g.*, section VI above. Therefore, Watson *et al.* with Lerner *et al.* fail to provide a motivation to find additional antibodies that bind to denatured equine IgE and fail to provide motivation or expectation of success in generating antibodies that bind to native equine IgE, as recited in claim 48. Thus, the cited references, alone or in combination, fail to provide a prima facie case for an obviousness rejection.

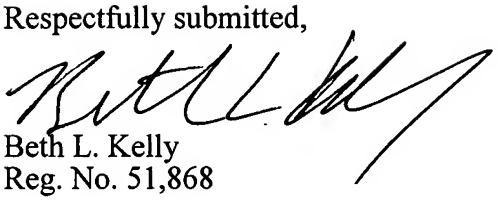
In view of the above amendments and remarks, Applicants respectfully request withdrawal of the rejections for alleged obviousness.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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Attachments
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